

===== WPI =====

TI - Prodn. of metallic mould for accurate patterning for e.g. mode converter - comprises anisotropically etching monocrystalline silicon or quartz base, coating with metal by e.g. sputtering to give surface for e.g. stamper

AB - J05004232 Mould prodn. comprises anisotropically etching a base of monocrystalline Si or quartz to form three dimensional features. The etched base is treated by e.g. vapour deposition, sputtering, electro-deposition, etc. repeatedly and is transferred to produce the mould. The etched base is used as a mould.

- USE/ADVANTAGE - For multi-core photoconnector ferrules, gratings in deflectors, reflectors, mode converters, etc. High precision three-dimensional pattern can be obtd. In an example, A SiO₂ pattern is formed on a Si (110) base provided with 0.8 micron thick oxide film. With potassium hydroxide, the base is anisotropically etched so that rectangular grooves are formed. A 1000 Å thick Ni film is formed on the etched base by sputtering. A 300 micron thick Ni film is formed by electro-deposition. Then, Si and Ni are sepd. and the top surface of the convexes are polished so that a stamper is produced (Dwg. 0/2)

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PR - JP19910180133 19910625

PA - (TOHO-N) TOHOKU NAKATANI KK

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===== PAJ =====

TI - MANUFACTURE OF MOLD

AB - PURPOSE: To form a mold for mass-producing a precise dimension product such as a multi-core fiber connector ferrule or grating by molding with high accuracy.

- CONSTITUTION: In the manufacture of a mold, sputtering 2 and electroforming 3 are performed on the basis of a three-dimensional shape 1 obtained by the anisotropic etching of a single crystal such as silicone or quartz and the shape 1 is transferred to form the mold with high dimensional accuracy of submicron.

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PA - TOHOKU NAKATANI:KK

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